REMARKS

The Examiner's final Office Action dated March 17, 2004 has been received and its contents carefully noted. The Applicants respectfully submit that this response, along with a request for an extension of time, is timely filed and fully responsive to the Office Action. By the above amendments, claims 8 and 10 have been amended. Therefore, claims 4-6 and 8-10 remain pending and of which claims 4-6, 8 and 10 are independent. In light of the above amendments and detailed arguments to follow, reconsideration of the currently proposed rejection is respectfully requested.

With regard to the rejections of:

Claims 4 and 8, under 35 U.S.C. § 102(b), as being anticipated by the teachings Kazuoki (JP '343), and

Claims 5-6,and 9-10 under 35 U.S.C. § 103(a), as being obvious in view of the combination of teachings Kazuoki ('343) and Takashi et al. (JP '566)

each of these rejections is respectfully traversed for the following reasons.

Claims 4 and 8 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Kazuoki (JP '343). However, the Applicants assert that in claims 4 and 8, an outgas released from a resist film which is irradiated by electron beam is collected to prevent absorbing the energy of electron beam. That is, when a resist film is irradiated with an electron beam, an outgas is released from the resist film. The resist film includes many kinds of organic materials, and, therefore, the outgas released from the resist includes many kinds of gas, for example, activated carbon. As a result, the outgases can absorb the energy of the electron beam, and as a consequence the electron beam, used at irradiating step, is disadvantageously non-uniform (see the instant specification at page 2, lines 2-8). The instant invention solves this problem by a collecting (and analyzing) the outgas in order to prevent fluctuation in the electron beam.

Turning to the Kazuoki (JP '343), the patentee fails to disclose a resist film and an electron beam aligner for using in lithography. Lithography is a method for forming a pattern by using a resist material having a specific property which is changed by irradiating. Kazuoki merely discloses poly-carbonate as a organic material - not a resist - (see Kazuoki p.242 right side upper paragraph lines19-left side lower paragraph line1) and a sputtering apparatus having electron beam unit (see figure.1). Kazuoki also discloses that a substrate, consisting of the organic material, is irradiated by an electron beam in order to release a gas and cool the substrate with a small amount of energy (see the partial translation of Kazuoki at page 242 left side lower paragraph lines 11-13). The object of Kazuoki is to provide the fine optical recording medium by releasing a gas included in a substrate using this small amount of energy (see the partial translation of Kazuoki at page 242 right side upper paragraph lines 6-8).

As noted above, one of the important aspects of claimed invention is the collection of out gas released from the resist film released during irradiation, as shown claims 4 and 8:

> 4. An outgas collection method comprising the steps of:
>
> · · · ***collecting an outgas released from said resist film when irradiated with said electron beam*** to prevent the outgas from absorbing the energy of the electron beam. (Emphasis added)
>
> 8. An electron beam aligner comprising:
>
> · · · ***wherein the exposure chamber is constructed such that an outgas, released from said resist film during irradiation with said electron beam, is collected*** in order to prevent the outgas from absorbing the energy of the electron beam. (Emphasis added)

However, such a feature is not taught by Kazuoki.

Accordingly, as each and every limitation, i.e., "***collecting an outgas released from said resist film,***" must be disclosed (explicitly or implicitly) by the cited prior art reference in order to establish a *prima facie* case of anticipation (see, M.P.E.P.

Chapter § 2131), it is respectfully submitted that claims 4 and 8 are patentable over Kazuoki.

With regard to the rejection of Claims 5, 6, 9 and 10, under 35 U.S.C. § 103(a), as being unpatentable over Kazuoki (JP '343) in view of Takashi et al. (JP '566), this rejection is also traversed for the following reasons.

In Claim 5, 6 and 10, an outgas released from a resist film, which is irradiated by electron beam, is collected and analyzed qualitatively or quantitatively to prevent absorbing the energy of the electron beam (see the specification at page 6, lines 15-19). The resist film is comprised from many kinds of organic or another materials; therefore, the outgas released from the resist film is composed of many kinds of gas components.

Turning to Takashi et al. (JP '566), the patent document fails to disclose a resist film and an electron beam aligner for using in lithography. Takashi merely discloses a high speed gas analyzer to determine N_2 in a metal sample quantitatively (see the partial translation of Takashi page.462, column 6, lines 7-19). Takashi does not disclose the analyzer to analyze qualitatively or quantitatively a gas released from the resist film, except for the N_2 gas to determine the nitrogen content of the metal sample.

The object of the claimed invention is to collect the outgas and to analyze qualitatively or quantitatively the composition of an outgas, e.g., an activated carbon, released from the resist film at the irradiation, as presented in claims 5, 6 and 10:

> 5. An outgas analysis method comprising the steps of:
>
> ···***collecting an outgas released from said resist film when irradiated with said electron beam*** to prevent the outgas from absorbing the energy of the electron beam; and ***analyzing a constituent of said collected outgas.*** (Emphasis added)
>
> 6. An outgas analysis method comprising the steps of:
>
> ··· ***analyzing a constituent of outgas released from said resist film when irradiated with said electron beam.*** (Emphasis added)

10. An electron beam aligner comprising:

> ···***wherein the exposure chamber is constructed such that an outgas, released from said resist film when irradiated with said electron beam, is collected and analyzed*** in order to prevent the outgas from absorbing the energy of the electron beam and ***to analyze the constituents of the collected outgas.*** (Emphasis added)

Takashi et al. obviously focuses on analyzing N_2 gas released from metals (see again the partial translation of Takashi at page 462, column 6, lines 7-19), so Takashi et al. do not have any concern with a plurality of gas components released from a resist film. In a similar manner, the Kazuoki document also fails to disclose a resist film and an electron beam aligner for use in lithography as mentioned above.

Therefore, as each and every limitation must be disclosed or suggested by the cited prior art reference in order to establish a *prima facie* case of obviousness (see, M.P.E.P. Chapter § 2143.03), it is respectfully submitted that claims 5, 6, 9 and 10 are patentable over Kazuoki taken alone or in combination with Takashi et al.

Under Federal Circuit guidelines, a dependent claim is not obvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, ***Hardness International Inc. v. Diplomatic Engineering Co.***, 819 F.2d 1100, 1108 2 USPQ2d 1826,1834 (Fed. Cir.1987). Accordingly, as claim 8 is patentable for the reasons set forth above, it is respectfully submitted that pending dependent claim 9 is also in condition for allowance.

Finally, as noted by MPEP Chapter § 609 at C(3), since the partial translations of Takashi et al. and Kazuoka have been submitted as evidence in response to the issues of patentability raised by the Examiner in the new grounds of rejection set forth in the final Office Action of March 17, 2004, there is no need to satisfy the requirements of 37 C.F.R. § 1.97 or 1.98; however, for the Examiner's convenience each partial translation is set forth on a PTO-1449A form attached hereto. Upon consideration of the partial translation, it is respectfully requested that the Examiner

provide an indication of such consideration by providing the Applicants with an initialed copy of the PTO-1449A form.

While the present application is now believed to be in condition for allowance, should the Examiner find some issue to remain unresolved, or should any new issues arise, which could be eliminated through discussions with Applicants' representative, then the Examiner is invited to contact the undersigned by telephone in order that the further prosecution of this application can thereby be expedited.

Lastly, it is noted that a separate Extension of Time Petition (one month) accompanies this response along with an authorization to charge the requisite extension of time fee to Deposit Account No. 19-2380 (740819-595). However, should that petition become separated from this Amendment, then this Amendment should be construed as containing such a petition. Likewise, any overage or shortage in the required payment should be applied to Deposit Account No. 19-2380 (740819-595).

Respectfully submitted,

Thomas W. Cole
Registration No. 28,290

NIXON PEABODY LLP
401 9th Street, N.W.
Suite 900
Washington, DC 20004-2128
(202) 585-8000
(202) 585-8080 fax

TWC/JWM